Date: Thursday, 13/11/2008 1:06:29 PM
User: Julie Dawson

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	**Drawing Name**	: STEM
Job Number	: 43422		
Estimate Number	: 10857		
P.O. Number	:	**Part Number**	: D34073
This Issue	: 13/11/2008 **S.O. No.** :	**Drawing Number**	: D3407 REV E
Prsht Rev.	: NC	**Project Number**	: N/A
First Issue	: / / **Type** : MACHINED PARTS	**Drawing Revision**	: E
Previous Run	: 43021	**Material**	:
Written By	:	**Due Date**	: 05/12/2008 **Qty:** 40 **Um:** Each
Checked & Approved By	: JLD 08.11.14		

Comment : Est Rev:A 05.10.18 New issue KJ/EC
Est Rev:B Now on Doosan 08-05-14 JLM Verified By:DD
Est Rev:C 08-08-12 revE as per dwg (ecn 08-507) DD verified by:EC

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	M174R0750	17-4 round bar .750

Comment: Qty.: 0.3843 f(s)/Unit Total : 15.3720 f(s) ?? M105710?? => 54 inches
Material: 17-4ph SS Round Bar Ø0.750(M17-4-R0.750)
Identify for D3407-3
Batch: M109478 SA 08/12/06

Seq. #:	Machine Or Operation:	Description :
2.0	DOOSAN LATHE	DOOSAN LATHE

Comment: DOOSAN CNC LATHE

1-Turn as per Folio FA597 Rev: A & Dwg D3407 Rev: E

2-Deburr SA 08/12/06 (38) (MO)

Seq. #:	Machine Or Operation:	Description :
3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE

Comment: INSPECT PARTS AS THEY COME OFF MACHINE SA 08/12/06 (38) (MO)

Seq. #:	Machine Or Operation:	Description :
4.0	QC8	SECOND CHECK

Comment: SECOND CHECK [signature] 08.12.09 (38)

Seq. #:	Machine Or Operation:	Description :
5.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and Stock
Location: CARL [signature] 8/12/09 (38)

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3407-3 D3407-043 PAR #: N/A (D206-640-4/11/4/12. Fault Category: Prod / Machined Parts NCR: (Yes) No DQA: [signature] Date: 08/10/12

Resolution: SCRAP Disposition: SCRAP QA: N/C Closed: [signature] Date: 08/10/12

NCR: 43422		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B: Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector
08/12/08	20	1 part too short on dimensions. 4.325, .150 and .550 R.C: Incorrect tool offset. operator error.	[signature] 08/10/12	SCRAP and Destroy and Replace Qty (1) B# M107478	[signature] 08/12/08	[signature] 08/12/10	[signature] 08/10/12	[signature] 8/12/8
08/12/08	20	1 part scrap. Part accidentely ran twice on 2nd op. R.C. Operator Error.	[signature] 08/10/12	SCRAP and destroy and Replace Qty (1) B# M107478	[signature] 08/12/08	[signature] 08/12/10	[signature] 08/10/12	[signature] 8/12/8

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

Date: Thursday, 13/11/2008 1:06:29 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: STEM

Job Number: 43422

Part Number: D34073

Job Number:

Seq. #:	**Machine Or Operation:**	**Description :**	
6.0	QC21	FINAL INSPECTION/W/O RELEASE	08/12/2009

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion

vmr 08-12-09

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ____________________ **Disposition:** ____________________ **QA: N/C Closed:** __________ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	43422
Description: Stem	Part Number:	D3407-3
Inspection Dwg: D3407 Rev: E		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

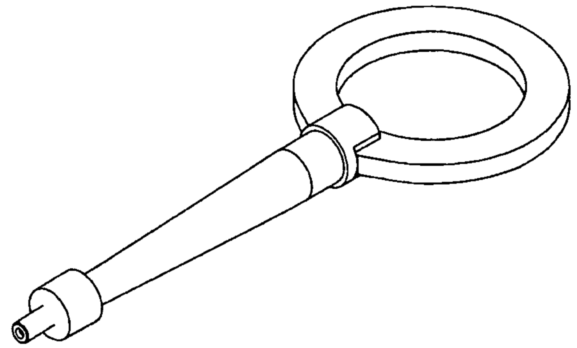
[X] First Article [ ] Prototype

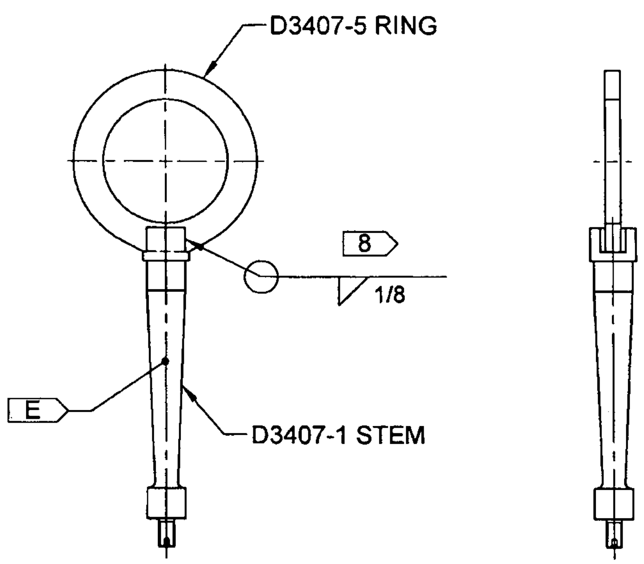
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.063	+/-0.010	.063	✓			
1/4-28 UNF	Max: 0.2668 Min: 0.2635	.265	✓			
Major Ø	Max: 0.249 Min: 0.2425	.246	✓			
Ø0.625	+/-0.010	Ø.626	✓			
Ø0.363	+/-0.010	Ø.360	✓			
Ø0.750	+/-0.010	Ø.750	✓			
R0.100	+/-0.010	R.100	✓			
0.470	+/-0.010	.471	✓			
0.250	+/-0.010	.250	✓			
2.555	+/-0.010	2.555	✓			
3.305	+0.000/-0.010	3.304	✓			
4.325	+/-0.010	4.326	✓			
0.150	+/-0.010	.151	✓			
0.550	+/-0.010	.550	✓			
0.625	+/-0.010	.626	✓			
0.250	+0.010/-0.000	.255	✓			

Measured by:	SD	Audited by:	[signature]	Prototype Approval:	N/A
Date:	08/12/06	Date:	08-12-08	Date:	N/A

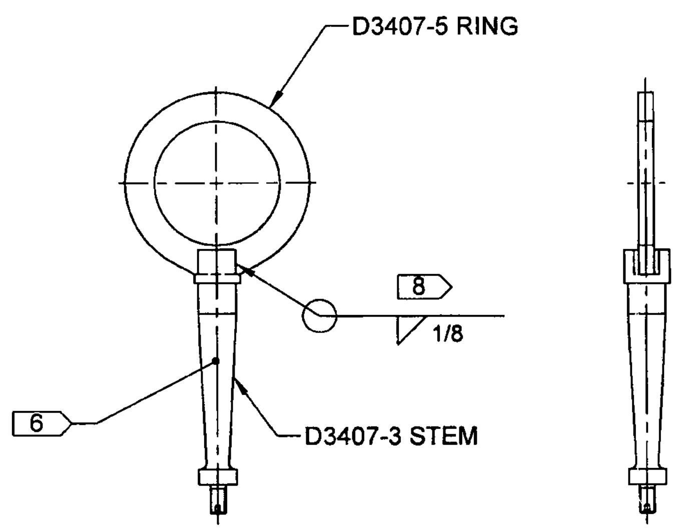
Rev	Date	Change	Revised by	Approved
A	06.11.08	New Issue	KJ/JLM	
B	07.09.26	Tolerances revised	KJ/EC	
C	08.05.14	Dimensions updated per Dwg Rev D	KJ/JLM	
D	08.10.07	Dimensions updated per Dwg Rev E	KJ/DD [initials]	[initials]

QTY -041	QTY -043	QTY -045	PART NUMBER	DESCRIPTION
X			D3407-041	TOW RING
	X		D3407-043	TOW RING
		X	D3407-045	TOW RING
1			D3407-1	STEM
	1		D3407-3	STEM
1	1	1	D3407-5	RING
		1	D3407-7	STEM

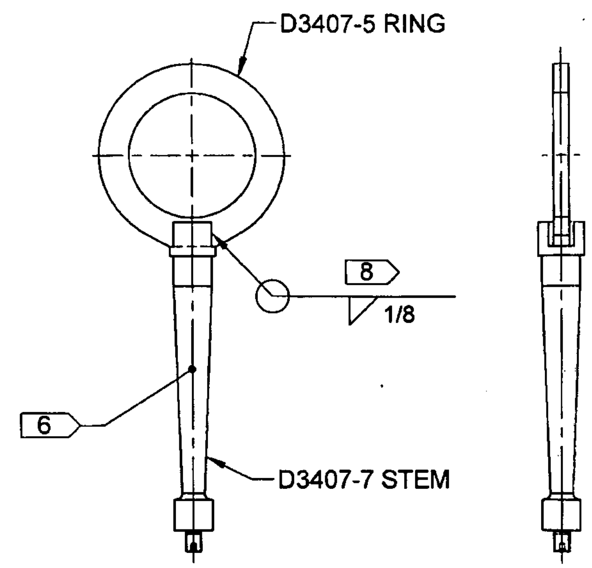




D3407-041 TOW RING



D3407-043 TOW RING



D3407-045 TOW RING (E)

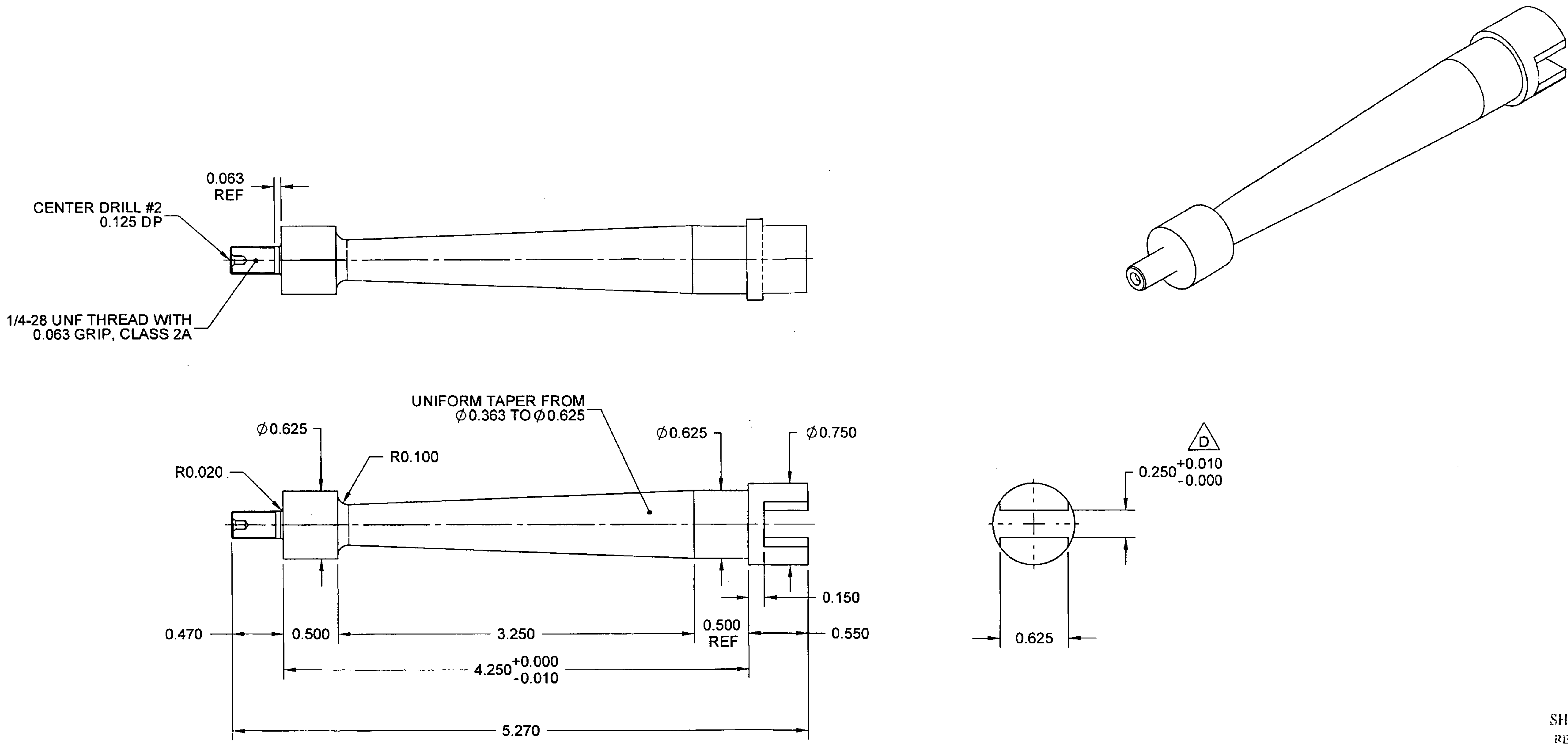
RELEASED 08-08-21

SHOP COPY RETURN TO ENGINEERING
UNCONTROLLED COPY SUBJECT TO AMENDMENT WITHOUT NOTICE
WORK ORDER NO. 43422

NOTES:
1) MATERIAL: N/A
2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3 (EXCEPT THREADS)
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3407-XXX" USING BLACK FINE POINT PERMANENT INK MARKER (E)
7) WEIGHT: D3407-041 - 0.60 lbs, D3407-043 - 0.53 lbs, D3407-045 - 0.61 lbs
8) WELD PER DART QSI 004 ON ALL EDGES BETWEEN STEM AND RING

REV.	DESCRIPTION	BY	DATE
E	ADD D3407-045 (ZN B2-1, D8-1); ADD D3407-7 (ZN B6-5); REVISED NOTE 6 TO ADD IDENTIFICATION (ZN A5-1); REASON: PRODUCTION FACILITY	PH	08.07.23
D	D3407-1/-3 SLOT WAS ROUND NOW FLAT FOR ASSEMBLY WITH D3407-5 (ZN C2-2, C2-3); D3407-5 WAS ROUND NOW FLAT ON ONE END FOR ASSEMBLY WITH D3407-1/-3 (ZN B6-4); REASON: PRODUCTION FACILITY	PH	08.04.07
C	-1/-3 LONGER FOR FIT W/WASHER	CP	05.09.09
B	UPDATE DIAMETER, THREAD CLASS ADDED	CP	05.06.17
A	NEW ISSUE	CP	05.03.16

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D3407 — REV. E — SHEET 1 OF 5
MFG. APPR.		
APPROVED		TITLE TOW RING — SCALE NTS
DE APPR.		
DATE	08.07.23	



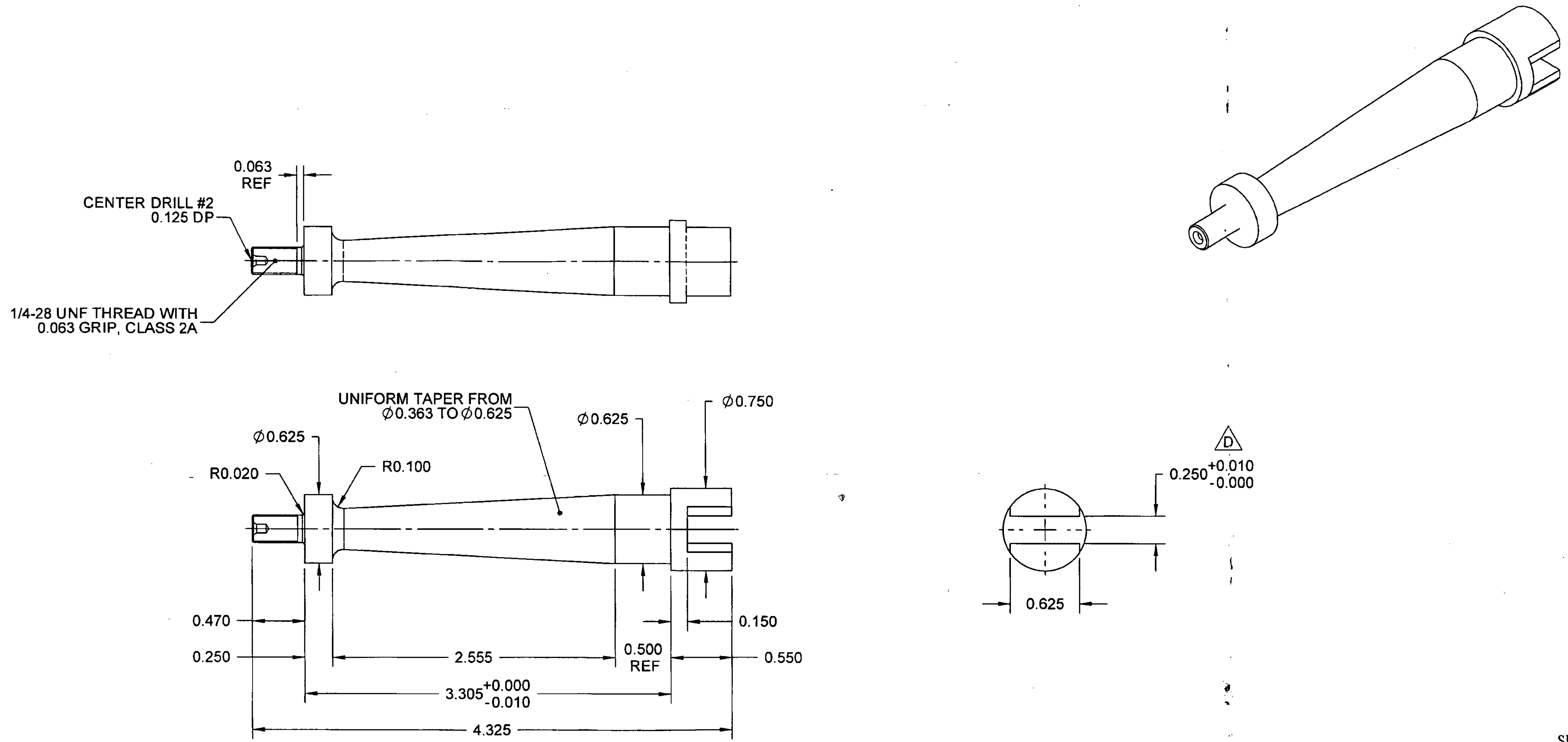
D3407-1 STEM

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WORK ORDER
NO. 4322

RELEASED 06-09-21

NOTES:
1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
6) IDENTIFICATION: N/A
7) WEIGHT: 0.33 lbs

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D3407 — REV. E — SHEET 2 OF 5
MFG. APPR.		
APPROVED		TITLE TOW RING — SCALE NTS
DE APPR.		
DATE	08.07.23	



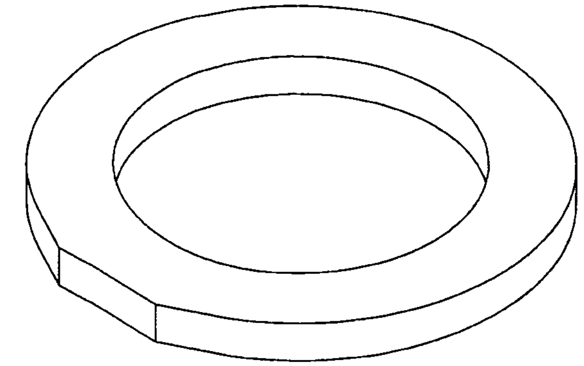
D3407-3 STEM

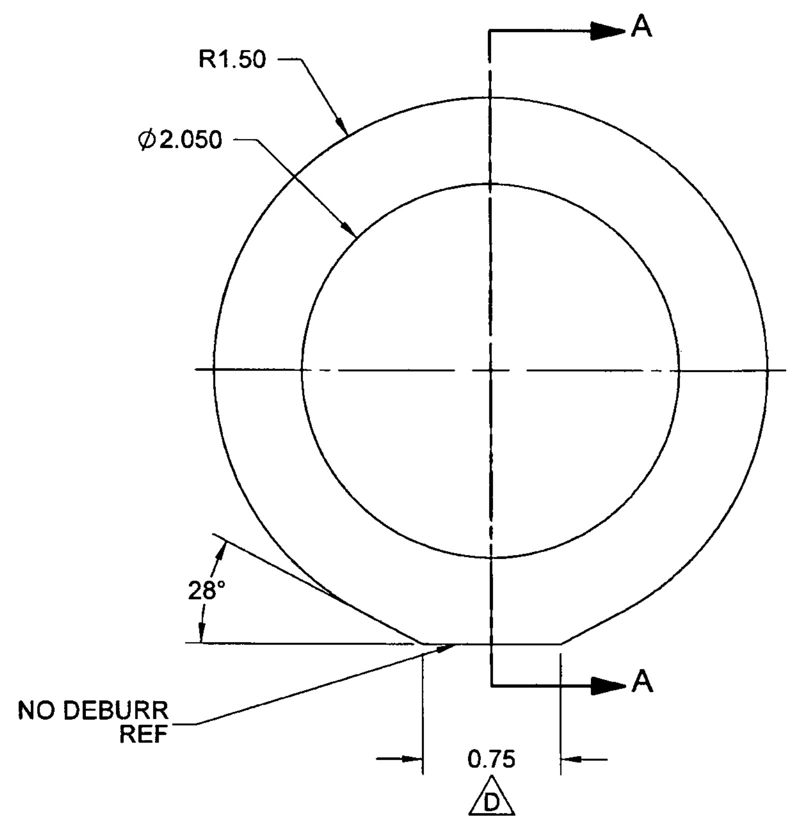
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WORK ORDER
NO. 43422

RELEASED 09-05-01

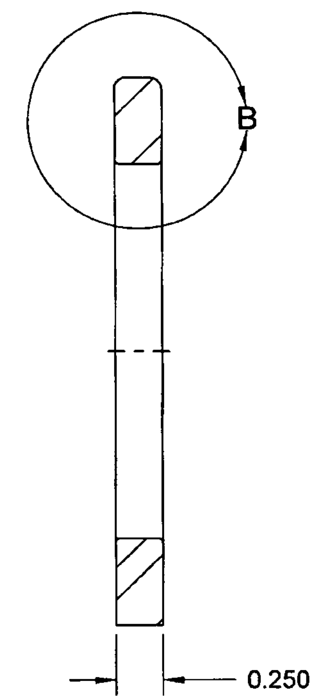
NOTES:
1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
6) IDENTIFICATION: N/A
7) WEIGHT: 0.27 lbs

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		DRAWING NO. D3407 — REV. E — SHEET 3 OF 5
CHECKED		
MFG. APPR.		
APPROVED		TITLE TOW RING — SCALE NTS
DE APPR.		
DATE	08.07.23	

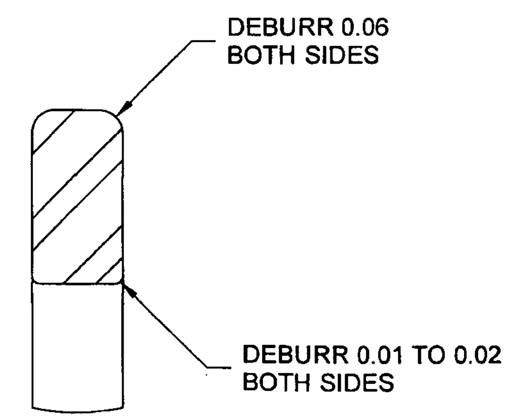




D3407-5 RING



SECTION A-A



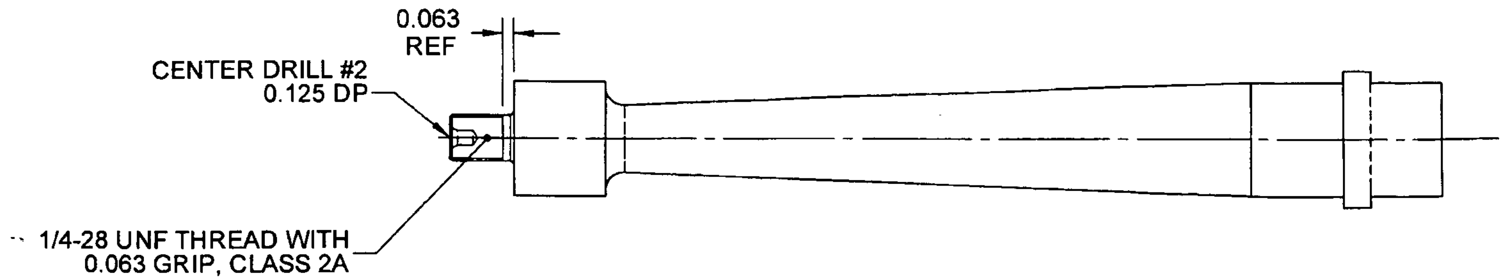
DETAIL B
SCALE 2X

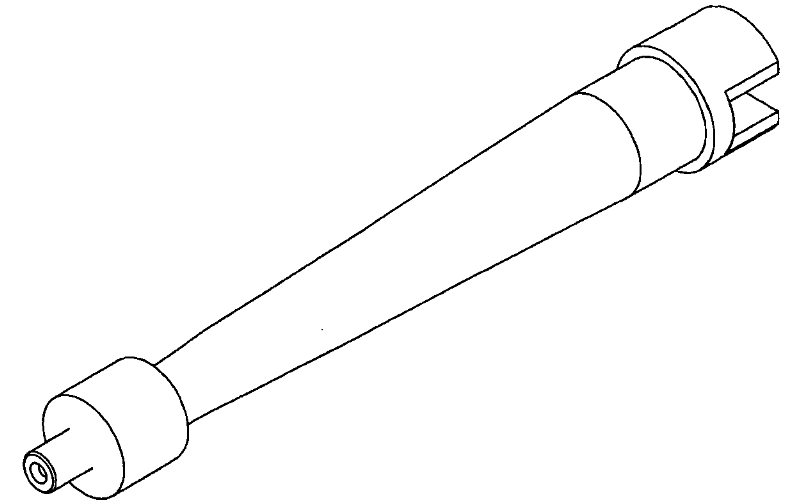
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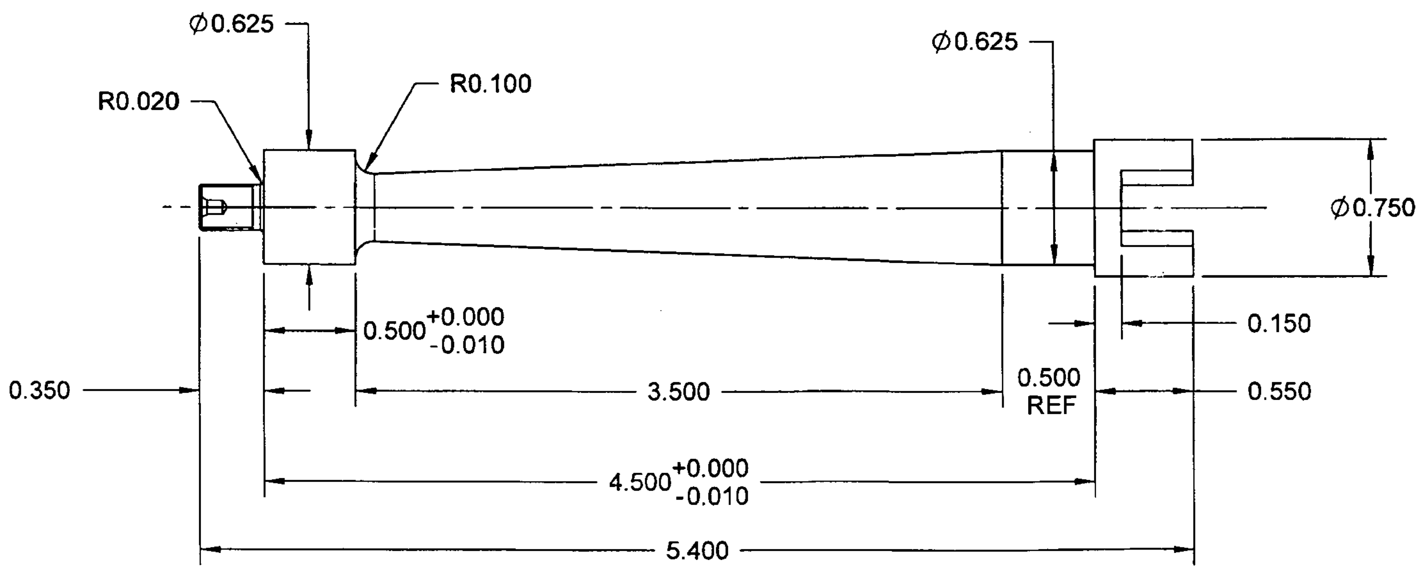
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WITHOUT NOTICE
WORK ORDER
NO. 43422

NOTES:
1) MATERIAL: 17-4 PH SS BAR PER AMS 5604/5643 (REF. DART SPEC M17-4-B)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: N/A
7) WEIGHT: 0.27 lbs

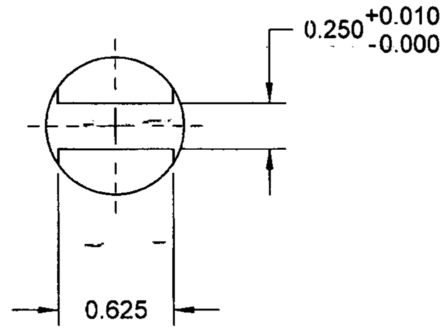
DESIGN		DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D3407 — REV. E — SHEET 4 OF 5
MFG. APPR.		
APPROVED		TITLE TOW RING — SCALE NTS
DE APPR.		
DATE	08.07.23	







E **D3407-7 STEM**



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WORK ORDER
NO. 4342

RELEASED 08-04-21 MP

NOTES:
1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
6) IDENTIFICATION: N/A
7) WEIGHT: 0.34 lbs

DESIGN	AJS	**DART AEROSPACE USA, INC.** PORT HADLOCK, WA	
DRAWN			
CHECKED		DRAWING NO. D3407	REV. E SHEET 5 OF 5
MFG. APPR.			
APPROVED		TITLE TOW RING	SCALE NTS
DE APPR.			
DATE	08.07.23		